

### Writing Prompt:

Write an essay that provides a general overview of what we've learned about DNA in our class so far. You may use any resources your wish, but make sure to explain each of the aspects of DNA we've discussed.

### Student's Response:

Deoxyribonucleic Acid, or DNA, is the blueprint for who we are. Its structure was discovered by Watson and Crick in 1961. Watson was an American studying in Great Britain. Crick was British (He died last year.) DNA is shaped like a twisting ladder. It is made of two nucleotide chains bonded to each other. The poles of the ladder are made of sugar and phosphate but the rungs of the ladder are made of four bases. They are thymine, guanine, and cytosine, and adenine. The amount of adenine is equal to the amount of thymine ( $A=T$ ). It's the same with cytoplasm and guanine ( $C=G$ ). The sequence of these bases makes us who we are. We now know how to rearrange the DNA sequences in human embryos to create whatever characteristics we want in new babies—like blue eyes, brown hair, and so on, or even how to remove hereditary diseases, but many people think it's unethical (playing God) to do this, so we don't do it. When DNA unzips to bond with other DNA when it reproduces, it sometimes misses the re-zipping order and this causes mutations. In humans, the DNA of one cell would equal 1.7 meters if you laid it out straight. If you laid out all the DNA in all the cells of one human, you could reach the moon 6,000 times!

### Activity:

Tell what grade you would give this student and why that grade is appropriate.

